

Claims

1. Method for data transmission in a wireless communication system,
 - in which a subscriber data signal assigned to a subscriber is
5 emitted by way of at least two antenna devices in the framework
of a diversity method, and
 - in which a reference signal assigned to the subscriber, which is
emitted by way of only one of the at least two antenna devices,
is used for determining runtime critical system parameters for a
10 positional determination for the subscriber, based on a signal
propagation delay measurement.
2. Method according to Claim 1, in which the reference signal is
emitted periodically at predefined time intervals or
15 aperiodically at time intervals selected at random.
3. Method according to Claim 1 or 2, in which the reference signal
is sent alternately by way of one of the at least two antenna
devices in each case.
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4. Method according to one of Claim 3, in which a receive-side
assessment of the measured signal propagation delays of the
alternately sent reference signal takes place and that antenna
device for emission of the reference signal is selected for
25 further positional determinations whose propagation path with a
minimal signal propagation delay corresponds to a direct
propagation path as a line-of-sight criterion.
5. Method according to Claim 1 or 4, in which the positional
30 determination is performed with the aid of the timing advance
mechanism.
6. Method according to one of the preceding claims, in which the
subscriber data signal and the reference signal are transmitted
35 with the aid of a time division multiple access method.

7. Method according to Claim 6, in which a training sequence of a time slot being used for synchronization is used as the reference signal.
- 5 8. Method according to Claim 7, in which with regard to a GSM mobile radio system an extended training sequence of the SCH time slot is used as the reference signal.
9. Method according to one of the preceding claims, in which
10 reference signals are stored on the transmit side in manufacturer specific form in a table.
10. Method according to one of the preceding claims, in which at
least two antenna devices having polarizations orthogonal to one
15 another or at least two antenna devices having the same polarization which have a fixed distance between one another are used.